

1. Non-lethal ammunition, comprising in combination, a cylindrical casing closed at the rearward end and open at the forward end, a propellant cartridge mounted to the rearward end and having a discharge end extending into the interior of said casing, a chemical sealant disposed about the propellant at the discharge end of the cartridge to facilitate uniformity of propellant firing, a projectile disposed in said casing, said projectile including a rearward end portion having a central cavity proximate to the rearward end of the casing and a forward end portion, the central cavity enclosing the cartridge and adapted to receive propelling gases released upon detonation of the propellant, and a payload connected to the forward end portion.

2. The ammunition as claimed in claim 1, wherein the sealant comprises a mixture of an ultraviolet (UV) curable acrylate and a photo-initiator, said mixture when exposed to UV light causing a cross-linking reaction to occur and a polymeric adhesive to be produced.

3. The ammunition as claimed in claim 2, wherein the sealant comprises a mixture consisting essentially of aliphatic urethane acrylate oligomer, high bonding acrylate hydroxyalkyl methacrylate, silica filler, and a photo-initiator.

4. The ammunition as claimed in claim 1, wherein the forward end portion includes a second central cavity, and further comprising a payload subassembly, said subassembly including a closure member formed of a resilient material, and a nose member, the closure member including an axially stem frictionally engaged with the wall of the second cavity and a cap sized to close

the cavity, the nose member being connected to said cap and forming a chamber therewith that carries said payload.

5. The ammunition as claimed in claim 4, wherein the nose includes an annular surface of a diameter slightly less than the outer diameter of said cap, wherein the nose is frictionally secured to the cap.

6. The ammunition as claimed in claim 5, wherein the nose is comprised of a compliant material that resists deformation during flight but is readily breached upon impact whereby to disperse the payload around the point of impact.

7. The ammunition as claimed in claim 6, wherein the nose is comprised of Styrofoam.

8. The ammunition as claimed in claim 4, wherein the closure member is comprised of foam rubber.

9. A non-lethal ammunition projectile, comprising:

a projectile body removably emplaceable within a shell casing, the body including a forward leg having a cylindrical forward end portion for mounting a payload, a rearward leg having a chamber for receiving a propellant, and a medial collar exteriorly configured for sealing engagement with the casing wall when the projectile is in the casing, the legs and collar being generally cylindrical and concentrically disposed along a central longitudinal axis,

a mass disposed within the forward end portion for balancing the projectile and inhibiting tumbling of the projectile in flight,

a payload subassembly removably emplaceable within the cylindrical

forward end portion, the subassembly comprising a closure member of resilient foam material, a nose member, and a payload, the closure including a stem sized to frictionally engage the wall of the forward cylinder and having a chamber to receive the weight whereby to position the weight centrally of the axis, and a cylindrical cap sized to closed the forward end of the chamber, and said nose member being dome-like and connectible in an interference fit to the cap whereby to form a chamber within which the payload is received.

10. The ammunition as claimed in claim 9, further comprising:

a cylindrical band fitted about the exterior of the forward end portion, the band having a contoured exterior surface for guiding the projectile in the air, and at least one mating protuberance and depression operating, respectively, between the inner surface of the band and the outer exterior surface of the forward end portion to resist relative rotation therebetween.

11. The ammunition as claimed in claim 10, wherein the protuberance extends radially outwardly from the exterior surface of the forward end portion and the depression extends into the inner surface of the band, whereby to prevent relative rotation therebetween.

12. The ammunition as claimed in claim 10, wherein the protuberance extends radially inwardly from inner surface of the band and the depression extends inwardly of the exterior surface of the forward end portion.

13. The ammunition as claimed in claim 10 wherein the protuberance and depression are axially elongated.

14. The ammunition as claimed in claim 10, wherein the cylindrical

band is comprised of a resilient deformable material, the protuberance and depression are generally hemispherically shaped, coaxial insertion of the band about the forward end portion operating bring the nub into engagement with and force the band outwardly until seating fitment of the nub within the depression.

15. The ammunition as claimed in claim 9, further comprising:

a cylindrical band fitted about the exterior of the forward end portion, the band forming a contoured exterior surface for guiding the projectile in the air, said band comprising first and second cylindrical ring portions each having a cutout along an end face thereof, the end faces being abutted and the cutouts brought into registry whereby to form an aperture, and

at least one mating protuberance extending radially outwardly from the forward end portion for fitment within the aperture to resist relative rotation therebetween.

16. The ammunition as claimed in claim 15, wherein said ring portions are comprised of a flexible elastomeric material.

17. A universal projectile ammunition, comprising:

a shell casing having a primer and propellant receiving end, a central casing wall defining a central chamber, and a payload expelling end,

a projectile body within the casing having a first leg disposed proximate to the primer end, a second leg proximate to the expelling end, and a medial closure collar which seals the central chamber, the first leg having a detonation chamber therein, and the second leg defined by a cylindrical wall having at least one longitudinally extending rib thereon and forming a central cavity,

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a cartridge containing propellant extending into the propellant receiving end and into enclosed relation with the detonation chamber, the propellant and the expelling end of the cartridge being sealed by a sealant adhesive comprising a mixture of an ultraviolet light curable acrylate composition and a photo-initiator,

a cylindrical sleeve mounted onto the second leg, the sleeve having at least one longitudinally extending axial cavity therein, the axial cavity receiving the rib therein,

a resilient closure cap having a stem frictionally engaged with the wall of the central cavity and a cylindrical cap disposed in closing relation with the central cavity,

a mass retained within a central recess of the stem and positioned proximate to the central collar,

a dome-shaped nose of resilient material frictionally engaged with the outer circumference of the cylindrical cap, whereby to form a chamber within which the payload is disposed.

18. The ammunition as claimed in claim 17, wherein the acrylate comprises a mixture consisting essentially of aliphatic urethane acrylate oligomer, high bonding acrylate hydroxyalkyl methacrylate, the sealant further comprising a silica filler photo-initiator.

19. The ammunition as claimed in claim 18, wherein the closure cap, mass, dome shaped nose, and payload comprise a subassembly that is assembled to the projectile body.